

Reading education: Diverse audiences, new text typologies, new times

Annah Healy & Karen Dooley
School of Cultural and Language Studies in Education
Queensland University of Technology
Victoria Park Rd
Kelvin Grove Qld 4059
Australia.

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Abstract

As the contemporary textual landscape is reshaped in a digital post-typographic age it becomes important to recognise that print is now only one of many media channels in our culture through which we communicate. The textual artefacts and accompaniments of a computer technology make a significant difference to the way in which texts are read. These 'ways' are unlike anything possible with paginated text. There are no suggestions here that print-based practices are obsolete, or that the silent, solitary contemplation of the written word is now *passé*. Nor do we suggest that the flexible text might be a means of relieving code-breaking difficulties. Therefore, while there can be no embargo on the place of print texts in reading agendas, there can be no parallel denial of the emerging importance of multimedia, digital texts in the community lives of children and adults. These changes in the textual environment need to be explicitly addressed in primary pre-service teacher education courses in universities. Extant issues concerning the differential distribution of print-based reading competence by class and ethnicity are currently rendered more complex by unequal access to new text forms. Over 40 years of research indicates that middle class children of dominant ethnic groups more readily recognise the literacy practices of schools, and are, in turn, recognised and skilled as readers in school. The advent of multiliteracies has disturbed this pattern, and there is evidence to suggest that new forms of economic and social advantage and disadvantage are emerging in relation to literacy skills. It is therefore imperative that pre-service teachers be prepared to build socially-valued outcomes on the multi-literacy competencies of diverse sets of learners.

Introduction

About 7000 years before modern research could assess his wisdom, *Manu the Code Giver* wrote in his *Manusmriti* (Chapter 12 Verse 103):

Literates are better than illiterates, retainers [who can recollect] are better than literates, thinkers [who understand, interpret, and judge] are better than retainers, and those who use [the learning] are better than the thinkers – and decidedly best of all (in McCullough 1958: 4).

If *reading* and *non readers* were to be substituted for *literate*s and *illiterate*s, Manu's statement would be one with which many contemporary reading theorists could agree. Indeed, there are fundamental similarities between Manu's conception of the literate being and an influential contemporary perspective on the reader as one who draws on linguistic and

other resources to engage with texts as code breaker, text participant, text user and text analyst (Luke & Freebody 1999). This family of literate practices are of particular interest as the social contexts of reading and post-typographic text typologies (and media/medium constructs) metamorphose in our time. Such conditions raise new and complex issues concerning equitable distribution of reading competencies across all groups of students in schools. Therefore the re-designing of reading education as a taught university subject for pre-service teachers in a post-typographic and postmodern cultural age is essential.

To deal with these issues, the paper has three sections. Firstly, the contemporary textual environment is described and reasons are established for looking anew at reading process. This entails the use of new textual theory that makes it possible to attend to the way that readers process the text created from a new image-verbal code relationship (Andrews 1997; Kress 1997; Healy 2000). It is shown that the reading of digital, multimedia text requires processing responses that differ from those required by print books. Related differences in the attitudes and emotional states of readers in the two types of textual environment are also documented.

In the second section of the paper, we consider social justice implications of the development of new textual environments and attendant cultural diversification. For this purpose, reading practices, and the attitudes and emotions in which they are embedded, are viewed as pedagogic identities (Bernstein 2000). This perspective is consistent with the common hypothesis that cultural differences between school, and home and community, are implicated in the systematic production of social disadvantage. We then extend this theorisation to highlight the reluctance of schools to engage with digital, multimedia reading.

The third section of the paper advances two major recommendations about bodies of knowledge that should be incorporated into reading education as a taught university subject: [i] a new transformative theory of reading process that accounts for typological and media changes; and [ii] sociological perspectives on the distribution of knowledge that empower all students to engage with multimodal texts. The aim is to prepare pre-service teachers to be reflexive about the contradictions and justice dilemmas arising from the perpetuation of traditional print-based reading programs given contemporary textual and cultural conditions.

The post-typographic environment and reading process changes

Digital, multimedia, and increasingly interactive texts are now commonplace in private, public, professional and economic sectors of the community. However, in education, print texts retain their centrality in reading agendas. Until recently, it was inconceivable that anyone would need to defend books as central to teaching reading. However, the digital multimedia and interactive text has stimulated a defence of the literary canon as core to literate activity as arguments emerge for the redundancy of the print book (Stannard 1997). Contra this 'hard' new literacies position, we do not suggest that pedagogy associated with teaching children to read linear strings of print is obsolete, or that the silent, solitary contemplation of the written word is now *passe*. Further, we do not suggest that the emergence of digital multimedia text has relieved low-achieving readers of the burden of breaking alphabetic codes. Rather, we claim that although print texts continue to have a crucial role in the school and university classroom, the increasing importance of new text forms in the community lives of children (and adults) cannot be denied as a core component in reading pedagogy, and therefore in pre-service education.

Reading theory: Where from? Where to?

Text typologies and structures have changed markedly and necessitate new theoretical perspectives within education that deal with reading process. Reading is variously described in the literature, and largely thought of and reported in terms of particular models. It seems to us, however, that reading is more effectively examined through sets of theoretical perspectives and paradigms rather than through models. The former provide explanations on the phenomenon of reading, whereas models are static and serve merely as metaphors to

represent theories – a representational snapshot of a dynamic process. Theory also describes the way a model operates and therefore is potentially more dynamic than is a model (Beach 1994; Merriam 1998). Where significant typological changes have occurred, the requirement is for theories that can accommodate the dynamics of text that neither conform to directionality orthodoxies (e.g., left-to-right, top-to-bottom), nor are essentially print dominated. Readers must now organise and reconfigure the display of text, necessitating a theory that establishes process relations between a range of media, flexible constructs, and typologies that break from traditional grammar orthodoxies (Aarseth 1997; Healy 1999; Kress 1997).

Cause and effect: Typology and readership

Lanham (1989) points out that relational combinations of the visual and verbal are not newly realised, as for over 2000 years multimedia has been employed in various texts including illuminated manuscripts, advertising, and children's books. More recently, film and television and postmodern picture books and multimedia CD-ROMs have appeared on the textual landscape. The fundamental difference is that CD-ROM configurations and information displays take the print-image relationship beyond anything possible on a two-dimensional surface, rendering previous relationships superficial (Andrews 1997; Kress 1997). Even when print is the only textual medium on a CRT screen, and presented in conventional ways, the reader of hypertext may be required to engage in interlocutor behaviour entailing a rewriting of the script – a reorganisation of the content that is not possible for readers of a print page in any other sense than thought processing. Such physical re-ordering behaviour necessitates additional cognitive processes to those required for print on a two-dimensional surface (Kress 1997; Moulthrop 1998; Snyder 1996). Moreover, there are important elements within reading process that have never fitted neatly within any perspective. Focus on these 'missing' elements helps to bridge the gap between print-based theories of the reading process and emergent theory in relation to the changed relationships between image and print in digital, multimedia text (Kress & van Leeuwen 1996; Kress 1997). Given these considerations, we assume that multimedia, and especially interactive texts, no longer carry *messages* exclusively through the grammars established by linear print codes. Therefore interpretative theories of reading (which never fully accounted for important elements of print reading) can no longer satisfy (Healy 2000).

It is crucial to understand what is different between what has been taught for print contexts, and what is applicable for new text forms in which print is only one medium. When considering the ways in which many young pre-school children become textually enculturated, it is important to recognise that much of the text field constitutes metaphor. Images are established by analogy and therefore become classificatory statements (Kress 1993). For example, the McDonald's golden arches symbol is likely to be interpreted by young pre-school children as both *a place to eat* and as *a sign* that is replicated throughout the environment, including the advertising media. The semiotic means whereby such a sign is established is that of analogy, the result a metaphor: the **M** (representing the golden arches symbol) is the place; the **M** place is where to eat. Signs are therefore the result of metaphoric processes in which analogy is the constitutive principle. Therefore children who access interactive and multimedia texts in the normal course of their lives are likely to develop cognitive text-mapping strategies different from their predecessors who learned to communicate according to the macrostructures of print-defined communication systems with their singular concepts of *sender*, *message*, and *receiver*. These three concepts have an established validity in print reading. Additionally a complex continuum of functions that exist in traditional communication theory is contingent on them. Theorists including Kintsch (1988) and Rumelhart (1994) who subscribe to print processing theories assume that the print element of any text is exclusively responsible for carrying the message (meaning), and image has a secondary role in meaning-making. Specifically, Rumelhart (1994) argues that where image is presented as idea, meaning is made of the image only through prior experiences with language that is used to express the idea. This implies that there is a transferral of meaning from one medium to another.

A challenge can be made to established reading process beliefs about *sender*, *message*, and *receiver* by using Eco's (1976: 141) explanation of *message*. He claims that the concept of *message* is rather a text, '... a network of different messages depending on different codes'. If this concept is applied to an incident within an action computer game, it exposes the inapplicability of the concept in non-print contexts. For example, when a virtual laser gun is fired in a game, is the firer to be conceived as the sender of the message, or its receiver? The firer is part of the medium, so also perhaps the message. In this context at least, Eco's concept of specific communicative positions becomes nontrivial. As the game becomes a text for the user at the time of playing, so it can be argued that the user becomes a text for the game, according to a set of codes. Each other's messages are exchanged and receive reactions according to the sets of codes. Therefore the game plays the user just as the user plays the game. There is no message apart from the play that defies the notion of singular concepts of sender, message, and receiver as it applies in traditional text theory (Aarseth 1997; Maldonado 1993). The epistemological problem becomes more evident with the increase in number and complexity of the media. The point is that a CD-ROM that offers audio, images, print and the means to alter the path of text, and which responds to a user's input, combines processes that are the object of several once separate theories of reading process and break with traditional assumptions about text authority and message carriage.

As an alternative Kress (1997), Andrews (1997) and Aarseth (1997) advance that changes to text typology and the way in which messages are dependent on multiple media require a visual cognition that differs significantly from processes relating to print. They argue that reading multimedia is more complex as a decoding-encoding process than has previously been conceived. This aspect of the make-up of a textual display constitutes the first of two major differences to the way in which texts are read. The second is interactivity.

Typological differences

Print texts are fixed. In a physical sense they are inert entities that stand aloof from the influence of a reader. For centuries the makers of *books* – scribes, scholars, publishers - have been inventing devices to increase the speed of print-information retrieval. The manuscript has gradually introduced paragraphing and chapters, and has been enhanced by indices, and bibliographies (Landow 1992). Yet the form of information retrieval that is possible with a hypertext document is not possible with conventionally produced print materials due to their unchangeable linear formats. Where the mind may travel between the portion of text being read and earlier reading, and between previous and current insights and arguments through reflective cognition and memory, the retrieval of physically disconnected text to a physically connected form, is not possible. The texts to which the mind refers are indeed linear and fixed. For example, in the case of tables, lists, flowcharts, footnotes, captions and heading hierarchies, the reader is still presented with linear forms of information, given that such texts do not always follow the explicit print grid orthodoxy. In these examples the linearity is to some extent established by the text's position in a two-dimensional space. Waller (1991) asserts that the advantage of such formatting to memory and recall over lines on a page, is that the eye perceives graphically displayed information as a dynamic text which assists the eye to link information spatially. Such a proposition is interesting in the digital context as interactivity provides for the reader to add multiple layers (when they are included in the larger body of text) and to arrange text on the screen in more flexible ways than any print context can allow.

Nonlinearity

For a text to be non-linear it must have a positive distinction: the ability to vary and produce different textual paths between which there are linking mechanisms. Reading hypertext means that the text surface and its spatial conditions set up the most obvious challenge to traditional notions of prediction processes. For example, a conventional print text cannot be read in the same way as can a hypertext because its technology denies the type of access provided where a reader is able to 'aggressively appropriate the text' (Bolter 1991: 154). The first difference is that the malleability of digital texts allows a true physical interaction. The interaction that is referred to between readers and print texts (and which fills the literature

about reading processes) has a metaphorical, rather than a literal, meaning. Until the digital debates argued for new theory in response to changed typologies, descriptions of reading as an interactive or transactional process (Rosenblatt 1978) came closest to challenging the notion that all readers process information in the same way. Transactional theory emphasised the active role of a reader to make meaning by bringing information to the text, rather than accepting a text's capability to project fixed/universal meanings.

Texts are after all cross-products between a set of matrices (linguistic, technological and historical). Due to the temporal instability of all of these variables, they become processes impossible to terminate or reduce. The point being made here is that the nature of flexible texts is such that no two readers approaching that text need encounter the same words, sentences, images or order of information in order to agree that it is likely the same text. The macrostructure of any text derives at least partially from the relations among the quantity of information to be presented, its intrinsic structures and spatial constraints. Literacy theorists and semioticians generally agree that it is the unity of sign systems and language which allow us to conceive and express, communicate and interpret, record and create *text*. McLuhan's (1964) maxim that *the medium is the message* implies that the message is the way in which the medium is *structured* rather than is the content. The WWW is a suitable example for demonstrating the point. In this case, the message of the current technological medium is the change of scale or pace or pattern that it introduces into human affairs – the medium thus shapes and controls the scale and form of human communication and action.

Transformative Reading Processes

In an attempt to explain reading process that applies to integrated compositions of information, Kress (1997) proposes a *transformative theory*. For Kress (1997) the most significant difference between theories of interpretation applicable to print, and a theory of transformation applicable to multimedia concerns how messages are carried. A theory of transformation applies to processes where reading the text display is dependent on the competence of an individual user to comprehend the relationship between codes, symbols and images (and any other relevant medium) as an integrated vehicle of meaning. In a theory of use applicable to the interpretative processes employed for messages constructed of a single medium such as print, theorists generally agree that the constructed orthodoxy of print requires a cognitive activity that constrains the eye to behaviours appropriate to the left-to-right, top-to-bottom condition. Such orthodoxy is the basis for readers to make predictions during reading (Ehri 1994; Samuels 1994). However, there is no such parallel for images or for text constructed through image-print integration (Andrews 1997; Barthes 1977; Dwyer & Dwyer 1989; Kress 1997; Eisner 1993; Raney 1997).

When image and verbal codes are presented in integrated composition, and the meaning of the text is carried as composition, a reader's imagery will serve as a mental peg on which to hang the sequence of events and ideological/theme details. Therefore the composition must be constructed sufficiently to facilitate its recollection as a sequence of events. In terms of reading process theory there seems little doubt that the processes applicable to a single medium operate very differently from the processes employed for integrated media. However, differences in textual display and in relation to different technologies cannot be polarised on the basis of their display differences. Differences may be more conceptual than visual in the sense that a cognitively active reader conceives visual information, symbol or cue within a text according to its inert or interactive qualities. For example, directional page cues displayed electronically on the *CRT* screen have no interactive potential and therefore have no visually significant differences from the page numbers of print-text.

The interactive potential of a text, whether in the form of animation effects or hypertext is the second element that makes a difference to reading, and to teaching reading process. Where digital texts provide an explorative function (Aarseth 1997) for interacting with the resources offered through the computer interface, a reordering of the various media makes a difference to how it is perceived by a reader (Aarseth 1997; Kress 1997). Such conditions for reading are different from those provided by integrated displays of information that are fixed on a page of text. Transforming interactive hypertext to meaning rests on a chain of processes not

the least of which is the individual's ability to combine images, audio, verbal codes and any other existing media to meaning. The text's logic is not always presented sequentially (which also can be the case with print and image fixed on a page), but a logic borne of what the user brings to the screen at a point in time. Therefore notions of prediction that have prevailed in a print context, and according to the grammars of print information, are also called into question.

However, responses to the changing nature of textual displays arise from more than a digital text viewpoint. A new grammar that can explain the changed image-verbal code relationship is called for, and one that questions how readers make meaning from any text constructed of multimedia whether in a conventional print book form or on a digital screen. In attempts to come to terms with a range of typologies and the differences they make to reading process, Kress (1997) categorises all codes as symbols, and symbols as codes in his arguing a changed symbolic relationship between verbal codes and image and sign. Also Andrews' (1997: 2-3) analyses of children's image representations of their world, and his reporting the visual-verbal text interface, proposes that 'symbols [encompassing codes] are important to the development of the syntagmatic or serial dimensions of language learning'. In the sense implied, iconic and directional symbols are as important as any other code or symbol for decoding and meaningful text participation. Emphases on the importance of accepting a theory that deals adequately with processes of integration/composition of symbols and codes seem critical. Any theory that

... is tied to and derived from one particular mode - for instance ... conventional theories of the visual - will permit neither an adequate nor an integrated description of multi-modal textual objects or how they are read (Kress 1997: 17).

Additionally, theories must be capable of describing the new text typologies, and the social contexts in which they are encountered. With respect to the social contexts of reading, we assume that the implications of the new text typologies and structures need to be understood in light of reading as social practice (Andrews 1996; Kress 1997; Mackey 1994). For the past decade, some have theorised reading in terms of social contexts and their effects on text purposes and audiences (Luke & Freebody 1999). With its capacity for describing different types and branches of literacy, this paradigm has represented a challenge to traditional definitions of reading. Motivation to read, and a positive attitude towards certain text types develops in response to the quality of the human and textual environment surrounding the learner (Green & Bigum 1993; Heath 1982; Mackey 1994; Papert 1993; Smith, Curtain & Newman, 1996). Just as the cognitive is better understood in the presence of affective information, there are pitfalls in researching affective variables such as motivation and attitude outside of cognitive aspects of reading (Athey 1985; Maslow 1979; Mathewson 1994). Together they illustrate cause and effect. Indeed, it has been mostly through a half century's study of reading difficulties that the links between motivation and attitude and cognitive reading success have been illuminated, regardless of what else might mitigate against a child learning to read (Corcos, Kruk & Willows 1993; Venezky 1991, 1993). In the case of children who have developed cognitive processing strategies for digital multimedia, and have less experience with print typology, it is likely that their attitudes and emotions as readers will be considered inappropriate in school, possibly producing affective traits antithetical to those that are sanctioned in that context.

Here we can learn from Bakhtin (1981) and his notions that readers learn about texts (and their own life-worlds) by remaking and transforming its symbols into their own texts, and in relation to their cultural and social perspectives and experiences. When these 'remakes' are positive in the sense that the novice reader is confident in his or her ability to make sense of the text, they produce affective states conducive to reading and text. This position is consistent with the sociological insight that the transmission of particular skills and knowledge, for example, the cognitive processes involved in reading, is always embedded within the transmission of particular conduct, character and manner, in this case, reading-related emotions and attitudes (Bernstein 2000).

Questions of social justice

Reading failure has been a key concern of projects seeking to redress the inequitable distribution of schooling outcomes (Luke 1992). In his well-known genealogical account, Hunter (1993) argued that this type of welfarist approach to education emerged not simply from egalitarian political principle, but also from the need to form a population capable of the economic and social participation essential for state security and prosperity. This entailed the distribution of certain minimal skills amongst the population, in addition to some amelioration of the educationally-based cleavages of social advantage that demonstrably accompany the construction of modern schooling systems (Ladwig 2000). As a result, principles of social justice are now enshrined in the official discourses of many of the school systems for which universities prepare teachers, for example, public education in the state of Queensland, Australia, where we work as reading educators. The distribution of reading and other literacy competencies is a key concern for those who are accountable to such policies (Dooley, Exley & Singh 2000).

Reading has been a focus of re-distributive projects in education because certain forms of reading competency facilitate acquisition of the school knowledge that has been linked to better life chances for many in the textual and cultural conditions of modernity (Bernstein 1975). Explanations of the educational inequality tackled through these projects have come to rely almost exclusively on notions of differences in cultural identities required in school contexts, and in home and community contexts. According to this argument, students need to recognise, and be recognised by, the configuration of skills and knowledge, and attitudes and emotional states, legitimated in school. This hypothesis can be conceptualised in various ways, Bernstein's notion of pedagogic identity, and Bourdieu's notion of habitus amongst them (Ladwig 2000).

In the Bernsteinian (2000) framework, attention is drawn to the pedagogic identities made available to children in textual practices. These identities consist of dispositions to particular skills and knowledge embedded in dispositions to particular forms of conduct, character and manner. They are formed by inference, from the visible surface of interaction, of the rules for selecting the meanings appropriate in a context and putting these meanings together legitimately. These latter rules are rules of control concerned with *who* selects, sequences and paces the acquisition of skills and knowledge in pedagogic communication, and establishes evaluative criteria for the display of such. Construction of these rules constitutes socialisation and makes certain actions on the part of the individual likely, and others, unlikely or even improbable (see also Bourdieu & Wacquant 1992).

The cultural difference explanation of school failure acknowledges the relationship between social power and school curriculum whereby advantage accrues to those with the power to determine curriculum; and disadvantage, to those without that power (Ladwig 2000). This hypothesis is commonly used to explain the inequitable distribution of reading competencies between children of dominant and dominated social groups (Au 1993). It has also been used to explain justice implications for children who arrive at school with many non-print textual competencies as a result of their ready access to digital and other electronic forms of text.

As was indicated earlier, digital, multimedia contexts socialise children into dispositions to relations of control unlike those of traditional print-based contexts, and hence, to dispositions to meaning making that are not legitimated in school. New typologies of visual and print text, and new forms of interactivity, require text-mapping strategies that differ from those used with traditional print texts. There is a need for enhanced visual cognition, and for competence in integrating visual with verbal and audio information. Moreover, the prediction strategies that are central to the interpretative reading processes used with linear, print texts are inadequate. It is questionable whether such competencies have much to do with the textual practices sanctioned by the school and in university reading education programs. Hence, Green and Bigum (1993) have argued that the life-world of the classroom is an alien space for many children who move in game parlour and cyberspace worlds outside of it. It has been suggested that this failure to utilise the competencies many children bring to the classroom is likely to have adverse effects on some their reading attitudes and practices in schools. Similar effects might be expected from failure to use texts that are entrenched in community practices

and of interest to students (Bazalgette 1988; Mackey 1994; Smith, Curtain & Newman 1996; Topping 1997).

In sum, the emergence of new textual environments in home and community literacy contexts creates new issues pertaining to the distribution of schooling outcomes and the construction of university reading education programs for pre-service teachers. Such issues are, arguably, endemic to schooling as a key institution of cultural reproduction in modern, capitalist society (Ladwig 2000). In current conditions of globalised, neo-liberal economic reform, however, these issues have acquired new urgency. The darker side of new times is evident in the creation of a large, cheap, flexible, global corps of workers who labour on demand as required to carry out low-level tasks in deeply exploitative conditions of temporary, part-time and sub-contracted employment. This pool of exploited workers is being created from those who lack the education necessary for the so-called enchanted knowledge work of the new economy. These workers generally come from largely from historically disadvantaged social groups, with the result that existing segregation of the workforce by race, gender and age is exacerbated (Gee & Lankshear 1997).

A cluster of factors is implicated in the sharpening of educationally-based social disadvantage at this time. Firstly, egalitarian imperatives for universal schooling have been weakened as private transnational economic interests have challenged national welfare state provisions. Secondly, participation in the schooling provisions that are being made is becoming more difficult for children of historically disadvantaged groups. On the one hand, there is evidence that the emergence of more self-conscious and instrumental forms of identity during the 1990s, and the weakening of traditional class identities, has made it easier for members of some historically disadvantaged groups to adopt the identities required for acquisition of socially valued skills and knowledge through schooling in some circumstances (Ladwig 2000). On the other hand, however, economic rationalist demands for accountability, coupled with neo-conservative demands for a 'return to standards', have seen the reinforcement of traditional, whole class teaching methods and standardisation of traditional curricula (Apple 2000). This not only exacerbates existing cultural differences between schools and disadvantaged homes and communities, but also works against the redress of newly emerging disjunctures between the print-based components of school cultures and the digital, multimedia components of cultures outside the school.

It has been suggested that literacy teachers can meet their accountability to systemic social justice policies in the new conditions we have described by resisting one-size-fits-all teaching methods. This is consistent with the hypothesis that disadvantage is produced by cultural difference between the school and particular homes and communities. It is an approach that requires teachers to build pedagogies that are productive for particular groups of students, recognising that all children may not learn, or need to learn, the same things in their pursuit of power and control over text (Green 1993; Luke 1999; Luke & Freebody 1997). In this context, the lack of connection between literacy practices inside and outside school is significant. It is of great concern that in day-to-day pedagogy in schools, reading remains almost exclusively bound to sets of protocols which restrict *text* and *reading* to the print page and its enduring traditions of author-controlled message and formulaic, linear structures. Similarly, it is of concern that print generally remains the focus of university reading education programs that prepare pre-service teachers for schools, and little accommodation is given in reading education to prepare pre-service students for school groups who engage with a significantly different textual environment outside classrooms.

From a sociological perspective (Bernstein 2000), the hold of print-based theories and methodologies in schools and universities is not only understandable, but also predictable. Pedagogic identities are made available to teachers as well as students in school and university subjects. These identities are constructed within discourses that regulate what is to become the content and method of pedagogic practice. For over 200 years in the case of reading and reading education, regulatory discourse has been concerned with certain types of print book (e.g., basal readers, literary texts, and factual texts encoding socially valued knowledge in the disciplines of official educational knowledge). This discourse has been

concerned also with methods entailing various forms of teacher and student relation (i.e., differing degrees of teacher and student control). Although there have been intense professional struggles amongst occupants of the various positions in this field, teachers of reading and reading educators in universities have nonetheless formed identities predicated on encoding-decoding processes that entail particular print conventions and typologies.

Any identity incorporates a system of psychic defence against revelation of the contradictions, cleavages and dilemmas that must be suppressed to maintain it (Bernstein 2000). In the case examined in this paper, those defences are evident in resistance to the incorporation of digital, multimedia texts in programs of school reading and university reading education. For example, many teachers continue to view media as a rival to conventional print-text in pursuit of literacy (Green & Bigum 1993; Lankshear & Knobel 1998; Papert 1993). This resistance often occurs as a result of teachers' attachment to the literary canon. At the same time, other teachers assume that children are competent consumers of photography, film, radio, computer text and television, but do little to include these text forms in the literacy practices of the school curriculum, including critique (Bazalgette 1988, 1993; Department of Employment, Education, Training and Youth Affairs, 1997).

The subjectivity formed through the construction of pedagogic identities is relatively irreversible because external stimuli and conditioning of ongoing experiences are perceived through dispositions already constructed by prior experiences. However, subjectivity can be transformed through reflexivity. Explicit clarification of socialised dispositions enables rational choice between letting psychic defences 'act' or consciously inhibiting their action, perhaps by pitting one pedagogic disposition against another (Bourdieu & Wacquant 1992). On this basis we suggest that it is essential for reading educators to re-design the knowledge base of pre-service reading education in order to promote reflexivity about the place of digital, multimedia texts in school reading programs, and attendant social justice issues.

The university pre-service context for teaching reading as sociocultural practice

Reading education in universities is an important site for the socialisation of pre-service teachers as teachers of reading. In considering the re-design of reading education to accommodate transformative theory, it is productive to use Bernstein's (2000) concept of recontextualisation. According to this concept, educational subjects such as reading education in universities are produced by shifting discourses from their original sites of production for the purpose of transmission at pedagogic sites. Relevant discourses include textual theories and theories about reading process, as pointed out earlier, and theories of teaching and learning. Each theory is delocated from the research context in which it is produced, related to other selected discourses, refocused accordingly, and re-located to the pre-service teacher preparation program. Throughout this paper we have indicated that university reading education programs do not account for the new text forms and attendant issues of social justice. To conclude the paper, we consider the types of discourse that might be productively recontextualised to a re-designed reading education to promote more equitable distribution of reading competence in a post-typographic and postmodern cultural age.

Specifically, we suggest that reading education needs to be re-designed to incorporate knowledge about the nature of reading processes in new textual environments. Teachers need to be able describe the micro-level disjunctures of content and relations of control negotiated by children as they move between settings where print and digital, multi-media texts are differentially valued. This requires the incorporation of the transformative theory of reading described in the previous section. We suggest, further, that this theory should be related to sociological insights into the formation of pedagogic identities. Pre-service teachers need such knowledge if they are to be reflexive about the social justice dilemmas arising from refusal to engage adequately with the reading competencies brought to school by children from digital, multimedia contexts. Moreover, such knowledge is necessary if teachers are to understand the social construction of their own predilections for traditional print texts.

This paper is inevitably historically and culturally positioned and its real concerns are part of a time when the conceptual transition from a print to a post-typographic world (which

continues to include print-based practices) appears difficult for a number of literacy teachers and theorists. A way forward, and certainly from our own perspective as university reading educators, is to promote within teacher education groups the notion that effective literacies are those which operate across technologies, and those which reflect cultural and community practices with text. Tertiary students must be made as familiar with the potential that technological texts bring to literacy education as they are with the print-based literacy curricula in which their own identities as literate persons have been formed (Healy 2000). We make this recommendation as part of a larger project concerned with better preparing teachers of reading to fulfil their accountabilities to social justice policies in new textual and cultural conditions that are producing sharper, cleavages of economic and social participation.

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